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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,952

10/13/2005

Reinhard H Sommerlade

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JoAnn Villamizar  
Ciba Corporation/Patent Department  
540 White Plains Road  
P.O. Box 2005  
Tarrytown, NY 10591

EXAMINER

TREIDL, JESSICA I

ART UNIT

PAPER NUMBER

4145

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,952	<b>Applicant(s)</b> SOMMERLADE ET AL.	
	<b>Examiner</b> JESSICA TREIDL	<b>Art Unit</b> 4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-10 and 11-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060109</u> .                                                | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### *Specification*

1. The following title is suggested: Trifunctional photoinitiators.

### *Claim Objections*

2. Claims 1, 2, 9, and 10 are objected to because the structures of R<sub>19</sub> and R<sub>20</sub> are undefined when the moieties refer to themselves. Two structures, included among the list of possible structures for the moieties R<sub>19</sub> and R<sub>20</sub> include themselves (-O-Si(CH<sub>3</sub>)(R<sub>19</sub>)-, -O-Si(CH<sub>3</sub>)(R<sub>20</sub>)- line 3) , in these structures R<sub>19</sub> and R<sub>20</sub> remain undefined.

Additionally, the recitation of the structure of moiety R<sub>21</sub> is unclear. Suggested correction is the insertion of the phrase "of the formula" after the existing phrase "is, independently of formula I, a radical." Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being obvious over Fuchs et al (WO 03/040076).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject

matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Regarding claims 1-5, Fuchs et al teach a process for the preparation of an  $\alpha$ -hydroxy ketone comprising the steps:

- a) reaction of diphenylmethane with an acid halide of formula  $R_1R_2CH-COHal$  and, optionally, further reaction with an acid halide of formula  $R_3R_4CH-COHal$  in the presence of a Friedel-Crafts catalyst, whereupon an isomeric mixture of claimed formula A is obtained, (P4/¶1/step a)
- b) bromination and hydrolysis of the isomeric mixture of formula A, whereupon an isomeric mixture of claimed formula B is obtained (P4/¶1/step b & c, where the chlorination step may be replaced with bromination step P5/¶5).

Although the reference does not disclose a halogenation step prior to the bromination step, the bromination reaction under certain conditions, such as a high ratio of bromine to the isomeric mixture of formula A, the addition heat, and/or the addition light, brominates the  $\alpha$ -carbon of the ketone and the carbon in the benzylic position (the carbon connecting the phenyl groups). Subsequent hydrolysis of the isomeric mixture

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of claimed formula A, brominated in the  $\alpha$ -carbon and benzylic positions, would produce the claimed formula B. The resulting structure, claimed formula B wherein  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_4$  are methyl groups, meets claims 1-5.

### ***Allowable Subject Matter***

7. Claims 6-8, and 11-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: Claims 6-8 are limited to  $\alpha$ -substituted ketones of formula I and II, wherein the structure connecting the phenyl groups is of a specific structure including Cl, Br, O, N or S, and isobutyric branches attached to the phenyl groups. The structure between the phenyl compounds, specifically wherein it includes  $R_6$  or nitrogen, differentiates the compound from the closest prior art, WO 04/009651 and WO 03/040076. Claims 11-15, drawn to compositions and a process comprising the claimed photoinitiator are considered allowable because the closest art does not motivate the compositions or process (WO 04/009651 and WO 03/040076).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA TREIDL whose telephone number is

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(571)270-3993. The examiner can normally be reached on Monday- Thursday,  
7:30AM- 5PM EST, Alt. Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gwendolyn Blackwell/  
Primary Examiner, Art Unit 1794

/J.T./  
/2.27.08/